CLAIMS

1. (Canceled)

2. (Previously presented) For an image to be re-sampled, a method of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to x[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said method comprising:

for k = to 2n, assigning a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k],said pixel position, and y[n-k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between a pixel segment seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}from said first line and a pixel segment seg[k,y]={y[n-k-c], . . ., y[-n-k+c]}from said second line, said first and said second segments approximately symmetric about said pixel position;

selecting from D[0] to D[2n] a first direction D[m] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m], said segment analysis adapted to verify said symmetric segment pair as belonging to an edge crossing said pixel position, said seg[m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

in response to said D[m] having been verified by said segment analysis, performing spatial interpolation at said pixel position along said D[m];

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} f(P(x[-n + k + r]), P(y[n - k + r]))$; and wherein said function P is adapted to assign a pixel value to every pixel.

3. (Previously presented) The method of Claim 2,

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} |P(x[-n + k + r]) - P(y[n - k + r])|$ is proportional to the expectation of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

4. (Previously presented) The method of Claim 2,

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} | P(x[-n + k + r]) - P(y[n - k + r]) |^2$

is proportional to the variance of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

5. (Previously presented) The method of Claim 2,

wherein for k = 0 to 2n, said A[k] = $\Sigma_{r=-c \text{ to } c}$ 1/ (| P(x[-n + k + r]) * P(y[n – k + r]) |) is proportional to the cross correlation of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

6. (Previously presented) For an image to be re-sampled, a method of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to x[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said method comprising:

for k = to 2n, assigning a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k],said pixel position, and y[n-k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between a pixel segment seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}from said first line and a pixel segment seg[k,y]={y[n-k-c], . . ., y[-n-k+c]}from said second line, said first and said second segments approximately symmetric about said pixel position;

selecting from D[0] to D[2n] a first direction D[m] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m], said segment analysis adapted to verify said symmetric segment pair as belonging to an edge crossing said pixel position, said seg[m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

in response to said D[m] having been verified by said segment analysis, performing spatial interpolation at said pixel position along said D[m];

wherein for k = 0 to 2n, said A[k] = J(g(x[i]), g(y[j])), I = -n + k– c to –n + k + c, and j = n – k – c to n – k + c; and

wherein functions J and g can be chosen in accordance with the application at hand.

7. (Original) The method of Claim 6, wherein said function g is the Fourier transform of P acting on pixels belonging to the symmetric segment pair seg[k,x] and seg[k,y] associated with D[k], for k = 0 to 2n.

8. (Original) The method of Claim 6, wherein said function g is the wavelet transform of P acting on pixels belonging to the symmetric segment pair seg[k,x] and seg[k,y] associated with D[k], for k = 0 to 2n.

9. (Original) The method of Claim 6, wherein for motion pictures, said function g(d[i]) = q(P(x[i]), motion_data(x[i])) acting at a pixel x[i] is equal to a combination q of pixel value function P acting at said pixel x[i] and the motion data information at said pixel x[i] to the symmetric segment pair associated with D[k], for k = 0 to 2n.

10. (Previously presented) For an image to be re-sampled, a method of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to x[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said method comprising:

for k = to 2n, assigning a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k],said pixel position, and y[n-k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between a pixel segment seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}from said first line and a pixel segment seg[k,y]={y[n-k-c], . . ., y[-n-k+c]}from said second line, said first and said second segments approximately symmetric about said pixel position;

selecting from D[0] to D[2n] a first direction D[m] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m], said segment analysis adapted to verify said symmetric segment pair as belonging to an edge crossing said pixel position, said seg[m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

in response to said D[m] having been verified by said segment analysis, performing spatial interpolation at said pixel position along said D[m];

wherein said segment analysis comprises performing a peak/valley count test to that the total number of peaks and valleys in a graph graph[m,x] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in a graph graph[m,y] assigned to D[m] assigned to does not exceed 1; and

wherein said graph[m,x] comprises { x[u], P(x[u]); for u = (-n + k)+(-n + k) to 0}, and wherein said graph [m,y] comprises { y[v], P(y[v]); for v = 0 to (n - k) + (n - k) }.

11. (Previously presented) The method of Claim 2, wherein said segment analysis comprises performing a pixel value difference test to verify that none of said 2c + 1 summands {f (P(x[-n + m + r]), P(y – m + r]); r = -c to c} of A[m]) exceeds a pre-defined threshold value.

12. (Previously presented) The method Claim 2,

wherein said segment analysis comprises performing a count test to verify that the total number of peaks and valleys in a graph graph[m,x] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in a graph graph[m,y] assigned to D[m] does not exceed 1; and

wherein said graph [m,x] comprises { x[u], P(x[u]) ; for u = (-n + k) +(-n + k) to 0 }; and wherein said graph[m,y] comprises { y[v], P(y[v]) ; for v = 0 to (n - k) +(n - k) }~~;~~ and performing a pixel value difference test to verify that none of said 2c + 1 summands {f (P(x[-n +m +r]), P(y[n – m + r]); r = -c to c} of A[m] exceeds a pre-defined threshold value.

13. (Currently amended) The method of Claim ~~1~~ 2, comprising in response to said D[m] having failed said segment analysis test, performing spatial interpolation at said pixel position along a default interpolation direction.

14. (Original) The method of Claim 13, wherein said default interpolation direction intercepts said pixel position, thereby forming approximately a 45-degree angle at said resampling pixel.

15. (Original) The method in any of Claims 3-6, wherein said 2n = 8, wherein said c = 3, and wherein said pixel value assigned by P is luminance value.

16. (Previously presented) For an image to be re-sampled, a method of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to x[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said method comprising:

for k = to 2n, assigning a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k],said pixel position, and y[n-k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between a pixel segment seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}from said first line and a pixel segment seg[k,y]={y[n-k-c], . . ., y[-n-k+c]}from said second line, said first and said second segments approximately symmetric about said pixel position;

selecting from D[0] to D[2n] a first direction D[m] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m], said segment analysis adapted to verify said symmetric segment pair as belonging to an edge crossing said pixel position, said seg[m,x] and seg[m,y] symmetrically located with respect to said pixel position;

in response to said D[m] having been verified by said segment analysis, performing spatial interpolation at said pixel position along said D[m];

performing a cross check test to verify that for a second direction whose slope is vertical or is of opposite sign from the slope of D[m] an absolute difference between A[h] and A[m] is less than a pre-defined threshold, and wherein D[m] is disqualified as an interpolation direction for said pixel position if said absolute is not less than said threshold; and

performing post processing by adjusting the interpolated value of said pixel position according to the interpolated value of said pixel position and the pixel values of pixels neighboring said pixel position.

17. (Currently amended) The method of Claim ~~1~~ 2, comprising:

performing an extreme value analysis on graph A[t] as t varies from 0 to 2n to detect a first case wherein said A[m] is a minimum with m is not equal to 0 or 2n and the slope of A[t] changes sign only once from negative to positive; a second case wherein said A[m] is a minimum with m equals to 0 and the sign of slope of A[t] remains positive; or a third case

wherein said A[m] is a minimum with m equals to 2n and the sign of slope of A[t] remains negative; and wherein D[m] is disqualified as an interpolation direction for said pixel position if none of said three cases is detected; and

performing post processing by adjusting the interpolated value of said pixel position according to the interpolated value of said pixel position and the pixel values of pixels neighboring said pixel position.

18. (Canceled)

19. (Currently amended) For an image to be re-sampled, a system of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to y[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said system comprising:

an evaluation unit adapted for assigning for k = 0 to 2n a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k], said pixel position, and y[n – k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between pixel segments seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}and seg[k,y]={y[n – k – c], . . ., y[n – k + c]};

a selection unit coupled to said evaluation unit, said selection unit adapted for selecting from D[0] to D[2n] a first direction D[m,] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

a segment analysis unit coupled to said selection unit, said segment analysis unit adapted to performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m] to verify that the micro-structure of said seg[~~mx,~~ m,x] and seg[m,y] is consistent with features of an edge, said seg[~~mx,~~ m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

an interpolation unit adapted for performing spatial interpolation at said pixel position along said D[m] in response to said D[m] having been verified by said segment analysis unit;

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} f(P(x[-n + k + r]), P(y[n - k + r]))$; and wherein said function P is adapted to assign a pixel value to every pixel.

20. (Previously presented) The system of Claim 19, wherein said segment analysis unit comprises:

a peak/valley count test unit to perform a peak/valley count test to verify that the total number of peaks and valleys in a graph graph[m,x] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in the graph graph[m,y] assigned to D[m] does not exceed 1, wherein said graph[m,x] comprises { x[u], P(x[u]) for u = (-n + m)+(-n + m) to 0}, and wherein said graph [m,y] comprises { y[v], P(y[v]); for v = 0 to (n - m) + (n - m) }.

21. (Original) The system of Claim 19, wherein said segment analysis unit comprises:

a pixel value difference test unit adapted for performing a pixel value difference test to verify that none of said 2c + 1 summands {f (P(x[-n +m +r]), P(y[n – m + r]); r = -c to c} of A[m] of exceeds a pre-defined threshold value.

22. (Original) The system of Claim 19, wherein said segment analysis unit comprises:

a peak/valley count test unit adapted for performing a peak/valley count test to verify that the total number of peaks and valleys in a graph graph[m,y] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in a graph graph[m,y] assigned to D[m] does not exceed 1, wherein said wherein said graph [m,x] comprises { x[u], P(x[u]) ; for u = (-n + k) +(-n + k) to 0 }; and wherein said graph[m,y] comprises { y[v], P(y[v]) ; for v = 0 to (n - k) +(n - k) }; and

a pixel value difference test unit adapted for performing a pixel value difference test to verify that none of said 2c + 1 summands {f (P(x[-n +m +r]), P(y[n – m + r]); r = -c to c} of A[m] exceeds a pre-defined threshold value.

23. (Previously presented) The system of Claim 19,

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} \mid P(x[-n + k + r]) - P(y[n - k + r]) \mid$ is proportional to the expectation of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

24. (Previously presented) The system of Claim 19,

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} \mid P(x[-n + k + r]) - P(y[n - k + r]) \mid^2$ is proportional to the variance of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

25. (Previously presented) The system of Claim 19,

wherein for k = 0 to 2n, said $A[k] = \Sigma_{r=-c \text{ to } c} 1/(\,|P(x[-n+k+r]) * P(y[n-k+r])|)$ is proportional to the cross correlation of said function P as a random variable function; and

wherein said A[m] is the smallest element of {A[0], A[1], ... A[2n]}.

26. (Currently amended) For an image to be re-sampled, a system of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to y[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said system comprising:

an evaluation unit adapted for assigning for k = 0 to 2n a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k], said pixel position, and y[n – k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between pixel segments seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}and seg[k,y]={y[n – k – c], . . ., y[n – k + c]};

a selection unit coupled to said evaluation unit, said selection unit adapted for selecting from D[0] to D[2n] a first direction D[m,] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

a segment analysis unit coupled to said selection unit, said segment analysis unit adapted to performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m] to verify that the micro-structure of said seg[~~mx,~~ m,x] and seg[m,y] is consistent with features of an edge, said seg[~~mx,~~ m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

an interpolation unit adapted for performing spatial interpolation at said pixel position along said D[m] in response to said D[m] having been verified by said segment analysis unit;

wherein for k = 0 to 2n, said A[k] = J(g(x[i]), g(y[j])), i= -n +k – c to -n +k +c, and j = n – k – c to n – k +c, wherein functions J and g can be chosen in accordance with the application at hand.

27. (Original) The method of Claim 26, wherein said function g is the Fourier transform of P acting on pixels belonging to the segment pair seg[k,x] and seg[k,y] associated with D[k] for k = 0 to 2n.

28. (Original) The method of Claim 26, wherein said function g is the wavelet transform of P acting on pixels belonging to the symmetric segment pair seg[k,x] and seg[k,y] associated with D[k] for k = 0 to 2n.

29. (Original) The method of Claim 26, wherein for motion pictures, said function g(x[i]) = q(P(x[i]), motion_data(x[i])) acting at a pixel x[i] is equal to a combination q of pixel value P acting at said pixel x[i] and the motion data information at said pixel x[i] to the symmetric segment pair associated with D[k], for k = 0 to 2n.

30. (Original) The system in any of Claims 23-26, wherein said 2n = 8, wherein said c =3, and wherein said pixel value assigned by P is luminance value.

31. (Currently amended) The system of Claim ~~18~~ 19, wherein said interpolation unit is adapted for performing spatial interpolation at said pixel position along a default interpolation direction in response to said D[m] having failed said verification by said segment analysis unit.

32. (Original) The system of Claim 31, wherein said default interpolation direction intercepts said pixel position, thereby forming approximately a 45-degree angle at said resampling pixel.

33. (Currently amended) For an image to be re-sampled, a system of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to y[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said system comprising:

an evaluation unit adapted for assigning for k = 0 to 2n a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k], said pixel position, and y[n – k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity

between pixel segments seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}and seg[k,y]={y[n – k – c], . . ., y[n – k + c]};

a selection unit coupled to said evaluation unit, said selection unit adapted for selecting from D[0] to D[2n] a first direction D[m,] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

a segment analysis unit coupled to said selection unit, said segment analysis unit adapted to performing a segment analysis on a symmetric segment pair seg[m,x] and seg[m,y] associated with D[m] to verify that the micro-structure of said seg[~~mx,~~ m,x] and seg[m,y] is consistent with features of an edge, said seg[~~mx,~~ m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

an interpolation unit adapted for performing spatial interpolation at said pixel position along said D[m] in response to said D[m] having been verified by said segment analysis unit;

a cross check test unit adapted for performing a cross check test to verify that for a second direction D[h] whose slope is vertical or is of opposite sign from the slope of D[m] an absolute difference between and is less than a pre-defined threshold, and wherein D[m] is disqualified as an interpolation direction for said pixel position if said absolute difference is not less than said pre-defined threshold.

34. (Currently amended) For an image to be re-sampled, a system of performing spatial interpolation at a pixel position of a resampling line, said pixel position immediately below pixel x[0] of a first line comprising pixels x[-n] to y[n], said pixel position also immediately above pixel y[0] of a second line comprising y[-n] to y[n], said system comprising:

an evaluation unit adapted for assigning for k = 0 to 2n a numerical value A[k] to a direction D[k] that is established as a possible interpolation direction intercepting x[-n+k], said pixel position, and y[n – k], wherein said A[k] is defined for indicating the likelihood of an edge crossing said pixel position along said D[k] by quantifying the degree of similarity between pixel segments seg[k,x]={x[-n+k-c], . . ., x[-n+k+c]}and seg[k,y]={y[n – k – c], . . ., y[n – k + c]};

a selection unit coupled to said evaluation unit, said selection unit adapted for selecting from D[0] to D[2n] a first direction D[m,] whose assigned A[m] indicates the highest likelihood of an edge crossing said pixel position along said D[m];

a segment analysis unit coupled to said selection unit, said segment analysis unit adapted to performing a segment analysis on a symmetric segment pair seg[m,x] and

seg[m,y] associated with D[m] to verify that the micro-structure of said seg[~~mx,~~ m,x] and seg[m,y] is consistent with features of an edge, said seg[~~mx,~~ m,x] and seg[m,y] symmetrically located with respect to said pixel position; and

an interpolation unit adapted for performing spatial interpolation at said pixel position along said D[m] in response to said D[m] having been verified by said segment analysis unit;

wherein said segment analysis unit comprises a peak/valley count test unit adapted to verify that the total number of peaks and valleys in a graph graph graph[m,x] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in the graph graph[m,y] assigned to D[m] assigned to does not exceed 1, wherein said graph[m,x] comprises { x[u], P(x[u]); for u = (-n + k)+(-n + k) to 0}, and wherein said graph [m,y] comprises { y[v], P(y[v]); for v = 0 to (n - k) + (n - k) }.

35. (Original) The system of Claim 19, wherein said segment analysis unit comprises:

a pixel value difference test unit adapted to verify that none of said 2c + 1 summands {f (P(x[-n +m +r]), P(y[n – m + r]); r = -c to c} of A[m] exceeds a pre-defined threshold value.

36. (Original) The system of Claim 19, wherein said segment analysis unit comprises:

a peak/valley count test unit adapted to verify that the total number of peaks and valleys in a graph graph graph[m,x] assigned to D[m] does not exceed 1, and that the total number of peaks and valleys in a graph graph[m,y] assigned to D[m] assigned to does not exceed 1, wherein said graph[m,x] comprises { x[u], P(x[u]); for u = (-n + k)+(-n + k) to 0}, and wherein said graph [m,y] comprises { y[v], P(y[v]); for v = 0 to (n - k) + (n - k) }; and

a pixel value difference test unit adapted to verify that none of said 2c + 1 summands {f (P(x[-n +m +r]), P(y[n – m + r]); r = -c to c} of A[m] exceeds a pre-defined threshold value.

37. (Currently amended) The system of Claim ~~18~~ 19, further comprising:

an extreme value analysis unit 333 is adapted to detect in a graph of A[t] as t varies continuously from 0 to 8 a first case wherein said A[m] is a minimum with m is not equal to 0 or 8 and the slope of A[t] changes sign only once from negative to positive; a second case wherein said A[m] is a minimum with m equals to 0 and the sign of slope of A[t] remains

positive; or a third case wherein said A[m] is a minimum with m equals to 8 and the sign of slope of A[t] remains negative; and wherein D[m] is disqualified if does not fit any one of said three cases.

38. (Currently amended) The system of Claim ~~18~~ 19, further comprising:

a post processing unit adapted for performing post processing by adjusting the interpolated value of said pixel position according to the interpolated value of said pixel position and the pixel values of pixels neighboring said pixel position.

39. (Canceled)

40. (Canceled)

42. (Canceled)

44. (Canceled)

45. (Canceled)

46. (Canceled)

47. (Canceled)

48. (Previously presented) A method for re-sample an image by spatial interpolation, said method comprising the steps of:

assigning n numerical value respectively to n pre-defined interpolation directions that intercept effectively at a pixel position in a resampling line, forming respectively n non-zero angles with said resampling line;

selecting an interpolation direction from said n interpolation directions by ranking said n assigned numerical values;

eliminating erroneous selection of selected interpolation direction by performing a plurality of verification tests on said selected interpolation direction; and

in response to the selected interpolation direction passing all verifications, performing spatial interpolation along said selected interpolation direction;

wherein said selected interpolation direction fails a first test of said plurality of verification tests if multiple edges are found crossing at said pixel position;

wherein said selected interpolation direction fails a second test of said plurality of said verification tests if the number of peaks and valleys is greater than one and

wherein said selected interpolation direction fails a third test of said plurality of verification tests if any of a plurality of summands adapted to define said assigned value of said selected interpolation direction exceeds a pre-defined threshold value.

49. (Canceled)

50. (Canceled)